

2011 State Damage Prevention Program Grants Progress Report
Funding Opportunity Number: DTPH56-11-SN-0001
CFDA Number: 20.720

Award Number: DTPH56-11-G-PHPS01

Project Title: Utility Notification Center of Colorado State Damage Prevention

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Specific Objective(s) of the Agreement

[Cut and paste from Article II, Section 2.03 of your agreement.]

Section 2.03 Specific Objective(s) of the Agreement

Under this grant agreement, the UNCC will:

- Foster Support and Partnership with Stakeholders (See Element 2)
- Support Public Awareness and Stakeholder Education (See Element 5)
- Support a Damage Prevention Education Program for industry stakeholders (See Element 4)
- Foster and promote the use of Improving Technologies (See Element 8) and
- Review the Effectiveness of Damage Prevention Programs (See Element 9)

Workscope

[Cut and paste from Article III. Workscope of your agreement.]

Article III. Workscope

Under the terms of this grant agreement, the Grantee will address the following elements listed in 49 USC §60134 through the actions it has specified in its Application.

- Element (2): A process for fostering and ensuring the support and partnership of stakeholders, including excavators, operators, locators, designers, and local government in all phases of the program.
- Element (5): A process for fostering and ensuring active participation by all stakeholders in public education for damage prevention activities.
- Element (4): Participation by operators, excavators, and other stakeholders in the development and implementation of effective employee training programs to ensure that operators, the one call center, then enforcing agency, and the excavators have partnered to design and implement training for the employees of operators, excavators, and locators.
- Element (8): A process for fostering and promoting the use , by all appropriate stakeholders, of improving technologies that may enhance communications, underground pipeline locating capability, and gathering and analyzing information about the accuracy and effectiveness of locating programs.
- Element (9): A process for review and analysis of the effectiveness of each program element, including a means for implementing improvements identified by such program reviews.

Note: Each element in the Specific Objectives aligns with a respective element in the Workscope. Further reference to accomplishments and future plans will reference only the Specific Objectives.

Accomplishments for this period (Item 1 under Article IX, Section 9.01 Progress Report: “A comparison of actual accomplishments to the objectives established for the period.”)

[How are you progressing on each of the items/elements provided in the “Specific Objectives” and “Workscope”? Start with an overall description followed by item-by-item or element-by-element detail if possible.]

A) Progress Overview

Colorado811 is pleased with the progress we have made through September 2011 with our damage prevention efforts defined in the 2011 PHMSA State Damage Prevention Grant (Grant). The Damage Prevention Action Team (DPAT) was established in 2008 and continues to provide strong industry leadership and innovative public awareness programs. The DPAT is a group of about 50 representative industry stakeholders in Colorado that meets twice each year. This group discusses, designs and coordinates statewide public awareness efforts funded through the Grant and shares and reviews the progress made during the year on these programs. The Grant Administrator, Colorado811 Public Relations Administrator, and the DPAT Chairman serve as the group’s leadership, provide the Grant program and finance administration and meet with all the Damage Prevention Councils (DPC) throughout the year.

Each DPC is also allocated a share of the Grant funds to support local (multi-county level) 811 public awareness, public school education, and stakeholder education programs. These programs have proven to be both innovative and successful at raising public awareness (as measured annually by the level of incoming tickets) and reducing the level of facility damages (as measured annually by damages per 1,000 incoming tickets). At the fall DPAT meeting, industry stakeholders and DPCs that have made significant progress or implemented innovative programs are recognized for their efforts. This recognition program has been quite popular with the stakeholders.

Finally, with the analysis from the Colorado Damage Data Report© (published annually since 2001) and the Colorado Damage Prevention County Report Cards© (published annually since 2007), we have been able to measure and identify the areas of the state where significant progress has been made as well as those areas that need improvement in awareness and damage prevention. Each of the 64 counties in Colorado is graded on three industry metrics that have been developed over the past four years and given an overall damage prevention grade. By looking at past data, we have been able to produce report cards dating back to 2004 (for a total of seven years). Stakeholders as well as DPCs can review the report card to identify the progress they are making in 1) public awareness, 2) damage prevention, and 3) damage incident reporting (via the CGA Damage Information Reporting Tool (DIRT)). In addition, this data allows us to establish that there has been an overall improvement in public awareness and damage prevention at the county level since 2004. With this information, in 2009 we developed several statistical tests that validate progress has been made in public awareness and damage prevention and that those counties with a DPC are performing at higher awareness and damage prevention levels than counties without a DPC. We have worked diligently over the past four years to develop these report card metrics and statistical tests and are pleased that they support our statement that we have made significant progress with the assistance of the PHMSA Grant since 2008. Additional discussion of results is provided under “Quantifiable Metrics”.

Each of the five objectives is reviewed next and includes a summary status of the budget.

Objective 1) Foster Support and Partnership with Stakeholders

The DPAT met in April 2011 to review Grant funding and approve spring and summer public awareness activities. Approximately 70 industry stakeholders from around the state attended the 2 day meeting and included One-Call administrators, facility owners, excavators, and first responders. Discussion included:

- Programs and funding for statewide damage prevention advertising program
- Programs and funding for Damage Prevention Awareness Week in April 2011
- Programs and funding for 811 Day in August 2011
- Programs and funding for DPC public awareness activities through September 2011
- Review progress on the DP Portal under development since 2008
- Funding for creation and delivery of a DP Stakeholder Education program in 2011
- Funding for development of a DP Education Registration & Testing web site in 2011

Each of the 15 DPCs reviewed awareness and education activities from the winter months (2010-2011). A number of the DPCs discussed the innovative methods (non-Grant funding) used to raise funds for supporting expanded DPC activities. Some of these included:

Annual stakeholder support fees

DP special program fees (primarily from pipeline operator support of RP1162 activities)

Fees for stakeholder booths at excavator breakfasts

Stakeholder advertising fees on clipboards

Participant and sponsorship fees from industry golf tournaments

Colorado now has 15 DPCs in the state, representing 30 of the 64 counties, 88.3% of the state population, 87.1% of the annual incoming ticket count and 86.6% of the annual facility damage count.

The Grant Administrator has tracked and administered the Grant funding, planned and coordinated the DPAT meetings, and met with many of the DPCs around the state.

125 hours were budgeted for Grant Administration, while a total of 74 hours have been expended for Grant Administration through September 2011.

STATUS: This task is ongoing through the end of the year.

The following tasks have been planned but not completed:

Fall DPAT meeting

Program expense approval and tracking

Final Grant Report

Budget Review

| | Budget | Paid Out (Through 09/30/2011) | Funds Available |
|----------------------------|------------|-------------------------------|-----------------|
| DPAT Support (Room-Awards) | \$2,000.00 | \$0.00 | \$2,000.00 |
| Grant Administration | \$6,400.00 | \$3,200.00 | \$3,200.00 |
| Admin Travel Expenses | 1,000.00 | 0.00 | \$1,000.00 |

Objective 2) Support Public Awareness and Stakeholder Education

STATUS: Parts of this task are ongoing through the end of the year.

The following tasks have been completed:

| | |
|--|------------|
| Support for Damage Prevention Awareness Spring-Summer 2011 | |
| Statewide video advertising campaign | \$4,500.00 |
| Google Ads – June-August | \$912.88 |
| Support DPC awareness and education | |
| 811 advertising decals | \$1,591.05 |
| 811 media advertising | \$520.00 |
| 811 school activity books | \$3,086.04 |
| 811 radio advertising | \$1,000.00 |

The following tasks have been planned but not completed:

Support for Fall and Winter Statewide Public Awareness Programs
Support for Fall and Winter DPC Support & Education

Budget Review

| | Budget | Paid Out (Through 09/30/2011) | Funds Available |
|----------------------------|-------------|-------------------------------|-----------------|
| State 811 Public Awareness | \$18,000.00 | \$5,412.88 | \$12,587.12 |
| Local DPC Support | 15,000.00 | \$6,197.09 | \$8,802.91 |

Objective 3) Implement the Damage Prevention Education Program for Stakeholders**Objective 4) Foster and Promote Use of Improving Technologies**

The DP Stakeholder Education Program will develop and deliver a safety education program for all stakeholders as mandated in the state One-Call Law. In the first year, the program will focus on One-Call Law requirements, with a 2nd year program focused on CGA Excavation Best Practices. About 20 classes will be conducted around the state and sponsored/supported by each local DPC. A certification test will be given for successful completion of the course as well as a course survey given upon completion. Additionally, in future years the course will be offered via recorded session on the internet.

The course content, course test and course survey have been developed by a committee of industry stakeholders and delivered by several industry professionals. Ten courses have been complete so far this summer. The course has been well received with over 200 stakeholders attending. The remaining courses are scheduled for October through December 2011.

To support the DP Stakeholder Education Program, a Web Site has been designed and is under development to provide course advertising and stakeholder registration for the course as well as an on-line course certification test. The web site should be completed by year end. Currently, the course test is delivered on-site after the course.

The development and use of the DP Education Web Site fosters the use of technology to improve the level of Education Course promotion, the quantity and quality of stakeholder communication and education, and the ease of record keeping and results tracking.

STATUS:**The following tasks have been completed:**

- Develop stakeholder education course, certification test, and course survey
- Design on-line web site for course registration and course testing
- Deliver pilot course for two DPCs
- Deliver course for eight DPCs (Total of 10 courses)

The following tasks have been started and should be complete by end-of-year:

- Develop the DP Education Web Site (Course Registration and Testing)

The following tasks have been scheduled and should be complete by end-of-year:

- Deliver course for approximately 10 additional DPCs

Budget Review

| | Budget | Paid Out (Through 09/2011) | Funds Available |
|---------------------------|-------------|----------------------------|-----------------|
| Develop Education Course | \$8,000.00 | \$2,000.00 | \$6,000.00 |
| Deliver Education Course | \$20,000.00 | \$5,000.00 | \$15,000.00 |
| Design Web Applications | \$3,000.00 | \$1,500.00 | \$1,500.00 |
| Web Development | \$17,000.00 | \$8,500.00 | \$8,500.00 |
| Education Travel Expenses | \$6,000.00 | \$0.00 | \$6,000.00 |

NOTE: Unbudgeted Expenses (see Requests of AOTR)

Co811 requests a reallocation of \$3,000 from Education Travel Expenses (\$6,000) to cover this unbudgeted printing expense to support the Stakeholder Education Program.

| | | | |
|-----------------------------|--------|------------|--------------|
| Education Material Printing | \$0.00 | \$2,180.77 | (\$2,180.77) |
|-----------------------------|--------|------------|--------------|

Objective 5) Review the Effectiveness of Damage Prevention Programs

Our damage prevention review process has been defined over the past three years and allows us to review local and statewide progress on an annual basis at a county level. Analysis of valid data forms the cornerstone of the review process. This data is provided by both the excavators and facility owners and originates in the Norfield One-Call ticketing system and the CGA Damage Information Reporting Tool (DIRT). The DPCs are the focal point of the damage prevention programs and the annual improvement process. Without them, we would not have the manpower resources to implement both the public and stakeholder programs.

If the DPCs are in fact effective at increasing public awareness and improving damage prevention at the local level, then the critical question remains whether continued financial support of damage prevention programs for the DPCs is a worthwhile and desired outcome of the four year PHMSA Grant project.

The purpose of the review and evaluation then is to determine if public awareness and damage prevention are improving and if the DPCs are contributing to that improvement.

The damage prevention review and evaluation process includes the following tasks:

Data Collection and Analysis Phase

1. Collect incoming ticket data at the county level from the Norfield Ticket System
2. Collect facility damage data at the county level from CGA DIRT
3. Collect demographic data at the county level from government sources
4. Analyze data, produce and publish the Annual Colorado Damage Report
5. Share Colorado Damage Report with stakeholders
6. Produce and publish the Annual Colorado County DP Report Cards

Data Evaluation Phase

7. Evaluate the effectiveness of public awareness efforts, as measured by the Awareness Metric, in counties with an active DPC versus those counties with no DPC. Determine the number of counties above and below the current year Awareness Threshold. Recent public awareness efforts are effective if more counties have moved **above the current year Awareness Threshold**.
8. Evaluate the effectiveness of damage prevention efforts, as measured by the Damage Metric, in counties with an active DPC versus those counties with no DPC. Determine the number of counties above and below the 2004 Damage Threshold. Recent damage prevention efforts are effective if more counties have moved **below the 2004 Damage Threshold**.

Feedback and Improvement Phase

9. Review Colorado County DP Report Cards and effectiveness measures with each DPC for relevant counties.
10. Assist each DPC with creating public awareness, public education and stakeholder education programs.
11. Assist each DPC with funding public awareness, public education and stakeholder education programs.

The preliminary metrics determined from the review and analysis will be reviewed in the "Quantifiable Metrics" section to follow.

STATUS: Parts of this task are ongoing through the end of the year.

The following tasks have been completed:

- Obtain and review relevant data from all sources
- Analyze the data and determine the two current year DP Metrics
- Chart the two current year DP Metrics
- Evaluate the progress made for each county
- Publish the County Report Cards

The following tasks have been started and should be complete by end-of-year:

- Review DP Metric results with each county
- Review DP Metric results at DPAT Fall meeting

Budget Review

| | Budget | Paid Out (Through 09/30/2011) | Funds Available |
|----------------------|------------|-------------------------------|-----------------|
| Grant Administration | \$3,600.00 | \$1,800.00 | \$1,800.00 |

Quantifiable Metrics/Measures of Effectiveness (Item 2 under Article IX, Section 9.01 Project Report: “Where the output of the project can be quantified, a computation of the cost per unit of output.”)

[This is difficult to explain across the board, but we’re trying to get a gauge for how effective this grant work is in improving your program. If your grant is more data oriented, you likely had some sort of metrics in mind to improve upon. If so, what were those metrics and how is the data looking now compared to when the program started? If you’re doing something along the lines of enforcement that involves incident review, how many cases have you been able to review/close and/or fines collected compared to before the grant work? If you pitched something more along the lines of public awareness, to how many stakeholders have you been able to reach? Even if you don’t have the metrics fully defined, put whatever you can here.]

A) Overview of Quantifiable Measures of Effectiveness

As defined under *Objective 5) Review the Effectiveness of Damage Prevention Programs, Data Evaluation Phase*, we defined two quantifiable measures of effectiveness:

1) Awareness Metric and Awareness Threshold

The Awareness Metric is a measure of Incoming Tickets versus population for each county. The Incoming Tickets are first adjusted by the population density, to compensate for vertical building designs in denser population areas. As population density increases, there is tendency for fewer tickets since fewer utility lines utilities serve more people. The Natural Log is taken of both the density adjusted tickets and the population since the two numbers are of vastly different scale. The ratio of LN(density adjusted tickets) and LN(population) is formed. Each of the 64 county ratios is then weighted by the percent share of tickets and a weighted average of all 64 counties is formed. This weighted average is used as the Awareness Threshold for each year. A small number of counties are above the threshold, with the majority of the counties below the threshold. Our stated goal is to have more counties above the Awareness Threshold over time, indicating that public awareness is improving over time. This goal is accomplished by helping support the DPCs financially and by providing annual feedback on the progress of the two Damage Prevention Metrics. The feedback is provided with the Annual Damage Report and the Annual County Damage Report Cards.

2) Damage Metric and Damage Threshold

The Damage Metric is a ratio of DIRT Damages versus 1,000 Density Adjusted Incoming Tickets for each county. Each of the 64 county ratios is then weighted by the percent share of damages and a weighted average of all 64 counties is formed. The 2004 weighted average is used as the Damage Threshold for all years. Counties will fall above and below the threshold. Our stated goal is to have more counties below the Damage Threshold over time, indicating that damage prevention is improving over time. This goal is accomplished by helping support the DPCs financially and by providing annual feedback on the progress of the two Damage Prevention Metrics. The feedback is provided with the Annual Damage Report and the Annual County Damage Report Cards.

B) Summary Review of Data from 2003 Through 2010

The two Damage Prevention Metrics are reviewed in more detail and an analysis provided in Section C). First, it may be helpful to provide a quick summary review of the data used to compile the County Damage Prevention Report Cards. The following table lists the statewide data from 2003-2010 and includes:

- Demographic data (population, pop density, net migration and building permits)

- One-Call data (incoming tickets, number of counties (of 64) with reported DIRT data, DIRT facility damages)
- DIRT facility damages for each facility type
- Damage metric (facility damages / 1,000 incoming tickets) for each facility type

Table A

| 2003-2010 UNCC State Damage Prevention Data | | | | | | | | | | | |
|---|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DEMOGRAPHICS | | | | | | | | | | | |
| Land Area: | 104,093 | Square Miles | | | | | | | %Change | %Change | %Change |
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2003-2010 | 2007-2010 | 2009-2010 |
| Population: | 4,583,430 | 4,649,698 | 4,718,562 | 4,813,536 | 4,908,108 | 5,013,015 | 5,083,221 | 5,160,189 | 12.6% | 5.1% | 1.5% |
| Population Density: | 44.0 | 44.7 | 45.3 | 46.2 | 47.2 | 48.2 | 48.8 | 49.6 | 12.6% | 5.1% | 1.5% |
| Net Migration: | 24,315 | 26,412 | 30,126 | 54,784 | 54,686 | 49,843 | 29,531 | 45,736 | 88.1% | -16.4% | 54.9% |
| Building Permits: | 39,569 | 46,199 | 45,891 | 38,343 | 29,454 | 18,998 | 9,355 | 11,591 | -70.7% | -60.6% | 23.9% |
| ONE-CALL DATA | | | | | | | | | | | |
| Incoming Tickets: | 788,314 | 789,539 | 764,883 | 727,039 | 643,647 | 563,041 | 470,716 | 500,622 | -36.5% | -22.2% | 6.4% |
| Counties w/ Reported Damages: | 56 | 56 | 52 | 56 | 56 | 51 | 55 | 53 | | | |
| DIRT Facility Damages: | 13,540 | 10,573 | 9,371 | 8,947 | 6,358 | 4,900 | 3,192 | 2,847 | -79.0% | -55.2% | -10.8% |
| Telecommunications Damages | 6,425 | 5,216 | 4,639 | 4,144 | 3,195 | 2,602 | 1,911 | 1,390 | -78.4% | -56.5% | -27.3% |
| Natural Gas Damages | 4,489 | 2,627 | 2,435 | 2,939 | 2,185 | 1,521 | 768 | 1,024 | -77.2% | -53.1% | 33.3% |
| Electric Damages | 1,666 | 1,561 | 790 | 1,497 | 635 | 472 | 231 | 267 | -84.0% | -58.0% | 15.6% |
| Cable TV Damages | 847 | 1,079 | 1,434 | 258 | 235 | 226 | 200 | 152 | -82.1% | -35.3% | -24.0% |
| Water Damages | 90 | 84 | 53 | 89 | 77 | 62 | 40 | 5 | -94.4% | -93.5% | -87.5% |
| Sewer Damages | 19 | 5 | 17 | 16 | 21 | 6 | 17 | 0 | -100.0% | -100.0% | -100.0% |
| Other Damages | 4 | 1 | 3 | 4 | 10 | 11 | 25 | 9 | 125.0% | -10.0% | -64.0% |
| DAMAGE METRIC | | | | | | | | | | | |
| Damages / 1,000 Tickets: | 17.2 | 13.4 | 12.3 | 12.3 | 9.9 | 8.7 | 6.8 | 5.7 | -66.9% | -42.4% | -16.1% |
| Telecom Damages / 1,000 Tickets | 8.2 | 6.6 | 6.1 | 5.7 | 5.0 | 4.6 | 4.1 | 2.8 | -65.9% | -44.1% | -31.6% |
| Nat Gas Damages / 1,000 Tickets | 5.7 | 3.3 | 3.2 | 4.0 | 3.4 | 2.7 | 1.6 | 2.0 | -64.1% | -39.7% | 25.4% |
| Electric Damages / 1,000 Tickets | 2.1 | 2.0 | 1.0 | 2.1 | 1.0 | 0.8 | 0.5 | 0.5 | -74.8% | -45.9% | 8.7% |
| Cable TV Damages / 1,000 Tickets | 1.1 | 1.4 | 1.9 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | -71.7% | -16.8% | -28.5% |
| Water Damages / 1,000 Tickets | 0.11 | 0.11 | 0.07 | 0.12 | 0.12 | 0.11 | 0.08 | 0.01 | -91.3% | -91.7% | -88.2% |
| Sewer Damages / 1,000 Tickets | 0.02 | 0.01 | 0.02 | 0.02 | 0.03 | 0.01 | 0.04 | 0.00 | | | |
| Other Damages / 1,000 Tickets | 0.01 | 0.00 | 0.00 | 0.01 | 0.02 | 0.02 | 0.05 | 0.02 | | | |

The following six multi-year trends stand out in the data:

- 1) State population has steadily increased by 1.4%-2.0% per year
- 2) Building permits decreased 80% since 2004, but increased 24% in 2010
- 3) Incoming tickets decreased 40% since 2004, but increased 6.4% in 2010
- 4) Facility damages decreased 73% from 2004 to 2010, and dropped 10.8% in 2010
- 5) The Damage Metric decreased 66.9% from 2003-2010, and dropped 16.1% in 2010
- 6) In most cases, the three year %change from 2007-2010 makes up the a large share of the change since 2004. PHMSA provided grant funding during this time frame.

There are four general conclusions that can be drawn from these multi-year trends:

- 1) Incoming tickets have decreased at a much slower rate (about one-half the rate) than construction activity, as measured by building permit data. This is a positive trend and may indicate that the general awareness level has in fact increased over time. Of course, it may also indicate that building construction companies were not requesting an appropriate level of tickets for the amount of excavation involved.
- 2) Facility damages have decreased at a much faster rate (almost twice the rate) than incoming tickets have decreased. It is always a good result when damages decrease, but if they are not decreasing at a faster rate than tickets are decreasing, progress has not been made. This result is a positive trend that points to a driving force that has improved damage prevention efforts by stakeholders.
- 3) The Damage Metric (facility damages / 1,000 incoming tickets) has decreased over time. Since this is a ratio of two industry measures, either of the measures could be impacting the decrease in the ratio. In this case, both measures have decreased, and since the numerator (damages) decreased at a faster rate than the denominator (tickets) decreased, the ratio decreased. This is a positive trend that points to a driving force that has improved damage prevention efforts by stakeholders.
- 4) Since PHMSA provided grant funding from 2008 through 2010 for public awareness and stakeholder education, there has been a significant increase in the rate of improvement for most of the measures. We view this as a positive trend, though it is limited to three years.

C) Quantifiable Measures of Effectiveness

Instead of looking at a table of numbers, we will visually present the relationship between the Awareness Metric and its Threshold and the Damage Metric and its Threshold on a two dimensional scatter chart.

The three scatter charts on page 13 visually demonstrate the improvements made in damage prevention for Colorado from 2004 through 2010. Each chart provides a snapshot of a measure of Facility Damage (a variation of the Damage Metric) versus a measure of Public Awareness (a variation of the Awareness Metric) for 2004, 2009 and 2010. We can hypothesize that as we create and support active Damage Prevention Councils (DPCs) within a county, public awareness should improve. We can also hypothesize that as we fund and support improvements in the quantity and quality of public awareness and stakeholder education efforts within a county, the Damage Metric should decrease within the county over time.

To understand how the three charts demonstrate these improvements, we must first explain how the charts are setup and how to interpret the information.

- a) Each chart represents a measure of Public Awareness on the horizontal X axis and a measure of Facility Damage on the vertical Y axis.
- b) The **measure of Public Awareness** is the County Awareness Metric for the year less the Awareness Threshold for the state that year. The Awareness Threshold (the current year ticket weighted average of the Awareness Metric) becomes the -0- vertical axis line and positive numbers to the right of the axis line represent higher levels of public awareness, while negative numbers to the left of the axis line represent lower levels of public awareness.
- c) The **measure of Facility Damage** is the 2004 Damage Threshold (the 2004 damage weighted average of the Damage Metric) for the state less the County Damage Metric for that year. The 2004 Damage Threshold becomes the -0- horizontal axis line and positive numbers above the axis line represent lower levels of facility damage, while negative numbers below the axis line represent higher levels of facility damage.
- d) The two axes divide the chart into **four quadrants**. Each quadrant represents a hypothesized cause-effect relationship between the Awareness Metric and Damage Metric.

| | | |
|------------------------|-------------------------|-------------------------|
| Quadrant 1 Upper Right | Higher Public Awareness | Lower Facility Damages |
| Quadrant 2 Upper Left | Lower Public Awareness | Lower Facility Damages |
| Quadrant 3 Lower Left | Lower Public Awareness | Higher Facility Damages |
| Quadrant 4 Lower Right | Higher Public Awareness | Higher Facility Damages |

- e) There is a small **green box** with a number and a small **blue box** with a number in each quadrant. The green box represents the number of counties in the quadrant with an active Damage Prevention Council. The blue box represents the number of counties in the quadrant without a Damage Prevention Council.
- f) The 64 **square data points** represent each of the counties within the state for that year. The green data points are counties with an active Damage Prevention Council that year. The blue data points are counties without a Damage Prevention Council that year.

Table B on page 11 summarizes the number of counties that fall in each quadrant for each year, showing both counties with and counties without a Damage Prevention Council. Careful study of the scatter charts on page 13 and Table B reveal progressive improvements

from 2004 through 2010 in public awareness and the facility damage metric as Damage Prevention Councils have been created and supported.

Table B - Summary of Awareness Metric versus Damage Metric Scatter Chart
Counties in each Quadrant with and without a DPC

| QUADRANT | Quadrant 1 | Quadrant 2 | Quadrant 3 | Quadrant 1 | Quadrant 2 | Quadrant 3 | Total |
|----------|------------|------------|------------|------------|------------|------------|-------|
| YEAR | With DPC | With DPC | With DPC | W/O DPC | W/O DPC | W/O DPC | |
| 2004 | 6 | 2 | 0 | 2 | 28 | 26 | 64 |
| 2009 | 9 | 12 | 3 | 3 | 29 | 8 | 64 |
| 2010 | 10 | 18 | 2 | 3 | 25 | 6 | 64 |

Observations

- 1) **Quadrant 4 represents the worst relationship for a county to attain** – high public awareness and high facility damages. Note that there are no counties in this quadrant in any year.
- 2) **Quadrant 1 represents the best relationship for a county to attain** – high public awareness and low facility damages. Note the number of counties in this quadrant increased from (6+2=8) in 2004 to (10+3=13) in 2010. Five counties moved from Quadrant 2 into Quadrant 1, a positive development as these counties improved their Awareness Metric and moved above the Awareness Threshold. Ten of the thirteen counties in Quadrant 1 in 2010 had an active Damage Prevention Council, while three counties did not.
- 3) **Quadrant 2 represents the next best relationship for a county to attain** – lower public awareness and lower facility damages. Note the number of counties in this quadrant increased from (2+28=30) in 2004 to (18+25=43) in 2010. Eighteen counties moved from Quadrant 3 up into Quadrant 2, a positive development as these counties reduced their Damage Metric and moved below the 2004 Damage Threshold (above -0- line). Eighteen of the 43 counties in Quadrant 2 in 2010 had an active Damage Prevention Council, while 25 counties did not.
- 4) **Quadrant 3 represents a worse relationship for a county to attain** – lower public awareness and higher facility damages. Note the number of counties in this quadrant decreased from (0+26=26) in 2004 to (2+6=8) in 2010. Eighteen counties moved from Quadrant 3 up into Quadrant 2, a positive development as these counties reduced their Damage Metric and moved below the 2004 Damage Threshold (above -0- line). Only two of the eight counties in Quadrant 3 in 2010 had an active Damage Prevention Council, while six counties did not.

To summarize these observations:

- 20.3% (13 of 64) of the counties have a high Public Awareness and a low Damage Metric. From 2004 through 2010, the number of counties in this quadrant increased from eight to thirteen.
- 12.5% (8 of 64) of the counties have a low Public Awareness and a high Damage Metric. From 2004 through 2010, the number of counties in this quadrant decreased from 26 to eight.
- 67.2% (43 of 64) of the counties have a low Public Awareness and a low Damage Metric. From 2004 through 2010, the number of counties in this quadrant increased from 30 to 43.
- From 2004 through 2010, the number of counties with an active Damage Prevention Council increased from eight to 30.

- From 2004 through 2010, the number of counties with a Damage Metric above the 2004 Damage Threshold (10.78) decreased from 26 to 8. This is an important improvement in damage prevention in Colorado.
- From 2004 through 2010, the descriptive statistics of the Damage Metric for the state improved significantly:
 - the average County Damage Metric decreased from 12.75 to 6.29, a significant 51% decrease.
 - the worst County Damage Metric decreased from 62.09 to 35.38.
 - the standard deviation, or range of the County Damage Metric decreased from 12.3 to 5.9, a significant 52% decrease.

NOTE: Since the County Damage Metric is derived from a population density adjustment and mathematical transformation (Natural Log), the value of the metric does not have a direct interpretation to the number of facility damages, but a lower value is better than a higher value.

The data and observations presented demonstrate that Colorado's dedicated industry stakeholders have successfully improved damage prevention efforts from 2004 through 2010 by moving several counties above the Awareness Threshold by moving many counties below the 2004 Damage Threshold. In addition, stakeholders have decreased the Damage Metric from 2004 through 2010 for many individual counties and the state as a whole.

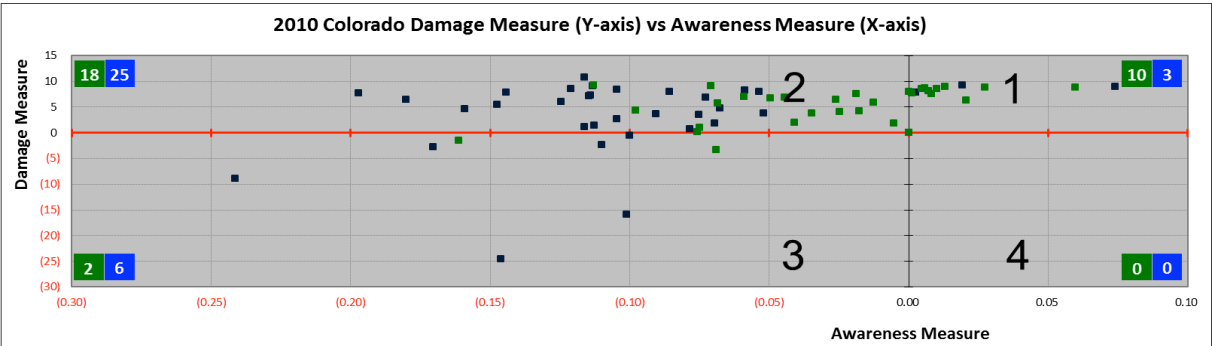
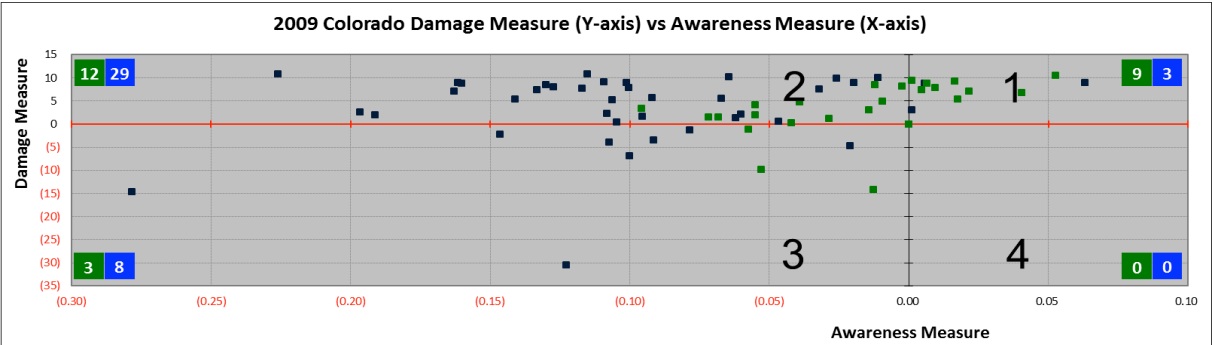
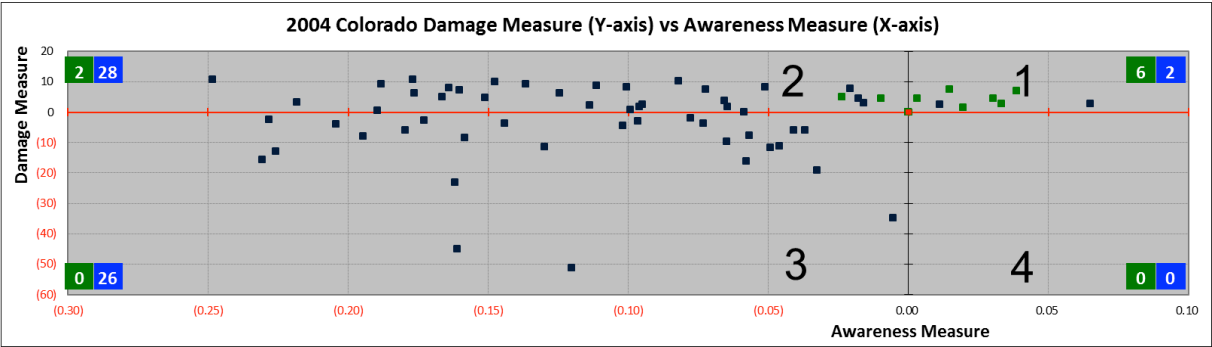
In the 2009 Mid-Term Report, we made the following 3 claims and provided a mechanism using this same information (from 2004 and 2009) to statistically validate each claim with a high level of confidence.

- | | |
|--------------------|---|
| Claim Statement-1: | Counties with an active DPC have higher levels of public awareness than counties without an active DPC. |
| Claim Statement-2: | Counties with an active DPC have better (lower than the 2004 Damage Threshold) levels of damage prevention than counties without an active DPC. |
| Claim Statement-3: | The Damage Metric is significantly lower in 2009 than it was in 2004. |

Our conclusion is that creating DPCs and supporting appropriate public awareness and stakeholder education programs is an effective method to enhance public awareness and improve damage prevention efforts in Colorado.

Acknowledgement goes out to the staff at CO811, the volunteers on the Damage Prevention Action Team, the fifteen Damage Prevention Councils around the state, the facility locate companies, and the many excavators and facility owners who support damage prevention best practices. A special thank you goes to DOT-PHMSA for providing the grant funding since 2008 that supported many of the damage prevention activities that have helped make a difference in Colorado.

Scatter Charts of Damage Metric versus Awareness Metric, 2004, 2009, & 2010



Issues, Problems or Challenges (Item 3 under Article IX, Section 9.01 Project Report: “The reasons for slippage if established objectives were not met. “)

[If the project is progressing on schedule, simply state that there are no issues, problems or challenge to report. If there have been delays for any reason, explain what they are and how that may impact the grant work. For instance, with some States, even after an agreement is in place, it has to be sent back to the Governor’s office for approval, which takes more time than originally anticipated. Even if work begins right away after the agreement is in place, other delays can be caused by personnel changes or simply having a better understanding of the effort required once the work is underway.]

There are no issues, problems or challenge to report

Mid-term Financial Status Report

[Per the instructions in Article IX, Section 9.03 of your agreement (included below), the financial status report should go to the Agreement Administrator (AA). For this section of the progress report, simply state “The mid-term financial report has been sent as a separate attachment to the AA.”. However, if there are any issues with the Financial Status Report or additional explanation is needed, please provide that information here. If there are any delays for whatever reasons, these should be communicated to the AA and AOTR in advance.

From Article IX, Section 9.03 of your agreement: “During the performance of the grant, the Grantee must submit a mid-term Financial Status Report, Standard Form 425 (SF-425), to report the status of funds. In addition to SF-425, the Grantee should provide the break down of costs for each object class category (Personnel, Fringe Benefits, Travel, Equipment, Supplies, Contractual, Other, and Indirect Charges). This report must be submitted to the AA in electronic form via e-mail no later than [refer to your agreement for date.]”]

The mid-term financial report has been sent as a separate attachment to the AA

A summary of the 2011 Grant budget, expense, funds available, hours used, and hours remaining is presented below.

Table C

| 2011 PHMSA Grant Funding Summary | Program Item | Budget | Expense | Available | Hrs Used | Hrs Remain | Budget |
|--|-----------------------------------|---------------------|--------------------|---------------------|---------------|---------------|---------------|
| Objective 1) Foster Support and Partnership with Stakeholders | DPAT Support | \$ 2,000.00 | \$ - | \$ 2,000.00 | | | |
| | Grant Administration, Reports | \$ 6,400.00 | \$ 3,200.00 | \$ 3,200.00 | 50.00 | 30.00 | 80.00 |
| | Travel Expense - Administrator | \$ 1,000.00 | \$ - | \$ 1,000.00 | | | |
| Objective 2) Support Public Awareness and Stakeholder Education | Statewide 811 Public Awareness | \$ 18,000.00 | \$ 5,412.88 | \$ 12,587.12 | | | |
| | Local DPC Support | \$ 15,000.00 | \$ 6,197.09 | \$ 8,802.91 | | | |
| Objective 3,4) Damage Prevention Education Program for Stakeholder | Develop Education Course | \$ 8,000.00 | \$ 2,000.00 | \$ 6,000.00 | 100.00 | 0.00 | 100.00 |
| | Deliver Education Course | \$ 20,000.00 | \$ 5,000.00 | \$ 15,000.00 | 37.50 | 212.50 | 250.00 |
| | Design Web Applications | \$ 3,000.00 | \$ 1,500.00 | \$ 1,500.00 | 22.00 | 15.50 | 37.50 |
| | Develop Education Web Site | \$ 17,000.00 | \$ 8,500.00 | \$ 8,500.00 | | | |
| | Travel Expense - Education Course | \$ 3,000.00 | \$ - | \$ 3,000.00 | | | |
| | Print Education Handouts | \$ 3,000.00 | \$ 2,180.77 | \$ 819.23 | | | |
| Objective 5) Review Effectiveness of Damage Prevention Programs | Quantifiable Program Metrics | \$ 3,600.00 | \$ 1,800.00 | \$ 1,800.00 | 24.00 | 21.00 | 45.00 |
| Totals | | \$100,000.00 | \$35,790.74 | \$ 64,209.26 | 233.50 | 279.00 | 512.50 |

Plans for Next Period (Remainder of Grant)

[In most cases, this section should just mention your plans for the remainder of the project. However, if you need to change the workscope at all for any reason, including whether you need to modify, remove, or add items, please explain.]

Objective 1) Foster Support and Partnership with Stakeholders

- DPAT Support

 - Fall DPAT meeting – October 2011

- Grant Administration

 - Track grant expenses

 - Prepare final grant report

 - Prepare final grant finance report

Objective 2) Support Public Awareness and Stakeholder Education

- Statewide and Local Support

 - Support for fall and winter statewide Public Awareness Programs

 - Support for fall and winter local DPC Public Awareness Programs

Objective 3 & 4) Implement the Damage Prevention Stakeholder Education Program

- Implement DP Stakeholder Education Program

 - Complete design and development of DP Stakeholder Education Web Site

 - Deliver Education Course to another 10 DPC locations

Objective 5) Review the Effectiveness of Damage Prevention Programs

- Post the County Damage Prevention Report Cards into the DP Portal

- Review report cards and program effectiveness results with all DPCs

Requests of the AOTR and/or PHMSA

[In most cases, any questions or actions requested of the AOTR and PHMSA (such as grant modifications in anyway) should have been addressed in advance of filing the report. If this is the case, simply state “No actions requested at this time” or explain any actions that are currently in process. However, if something has come up recently, or if you haven’t been able to discuss with the AOTR yet, please describe here.]

Co 811 requests a reallocation of \$3,000 from the Total Travel Expense Line Item (\$7,000) to be used for printing support material for the DP Stakeholder Education Course. This item was overlooked in the original grant budget. To reduce the requirement for the budgeted travel expenses, we have reduced the number of courses where we scheduled two instructors to deliver the course.

Please notify JD Maniscalco if this is acceptable. jdman@co811.org